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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/831,995      | 05/16/2001  | Dmitrii Stepanov     | CU-2505-RJS         | 2237             |

7590 06/04/2003  
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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n N .

09/831,995

Examiner

Armando Rodriguez

Applicant(s)

STEPANOV ET AL.

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 69-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 69-89 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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TECHNOLOGY CENTER 2800

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 69-89 have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of lasers recited in claims 73,74,84 and 85 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 77,82,83 and 89 are objected to because of the following informalities: the claims recite "in use", which implies a method of using within an apparatus claim. Appropriate correction is required.

### ***Double Patenting***

Applicant is advised that should claim 77 be found allowable, claim 89 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing

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one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 69-80 and 82-89 are rejected under 35 U.S.C. 102(b) as being anticipated by Scifres et al (PN 5,103,456).

Scifres et al discloses an integrated amplifier laser diode, which can be distributed feedback (DFB) or distributed Bragg reflector (DBR), as described in the abstract.

Regarding claims 69,73,74,77,84,85,88 and 89,

Figure 8 illustrates a laser (11), which can be a DFB laser, a reflector (41R), which reflects the laser beam from laser (11), an amplifying medium (13), which receives both the laser beam and the reflected beam from reflector (41R). The emitted laser beam and the reflected beam provide wave mixing within the amplifying medium (13), which will induce gratings within the medium as a result of the interfering beams. As shown in figure 8 the amplifying medium (13) and the reflector (41R) are both external to the laser cavity (11). Thereby, having similar structural arrangements the phase discriminating properties of the induced gratings are inherent in figure 8.

Regarding claims 70,78,79 and 80,

Figure 8 illustrates an amplifying medium (13) in the optical path of the laser beam emitted by laser (11) and the reflector (41R).

Regarding claims 71,72,82 and 83,

The emitted laser beam and the reflected beam provide wave mixing within the amplifying medium (13), which will induce gratings within the medium as a result of the interfering beams. Thereby, having similar structural arrangements the phase discriminating properties of the induced gratings are inherent.

Regarding claims 75,76,86 and 87,

Figure 8 illustrates the laser cavity (110 having Bragg gratings (14) and (15).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 77,78 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al (PN 5,103,456) in view of Feuer (PN 6,078,597).

Figure 8 illustrates a laser (11), which can be a DFB laser, a reflector (41R), which reflects the laser beam from laser (11), an amplifying medium (13), which receives both the laser beam and the reflected beam from reflector (41R). The emitted laser beam and the reflected beam provide wave mixing within the amplifying medium (13), which will induce gratings within the medium as a result of the interfering beams. As shown in figure 8 the amplifying medium (13) and the reflector (41R) are both

external to the laser cavity (11). Thereby, having similar structural arrangements the phase discriminating properties of the induced gratings are inherent in figure 8. Figure 8 illustrates an amplifying medium (13) in the optical path of the laser beam emitted by laser (11) and the reflector (41R).

Scifres et al does not disclose the laser system formed in an erbium doped fibre.

Feuer illustrates in figure 6 an erbium doped fiber, which provides induced gratings within the amplifying medium by wave mixing, as disclosed in column 7 lines 53-67.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to from the laser system of Scifres et al into an erbium doped fiber of Feuer because the erbium doped fiber would provide induce gratings within the amplifying medium.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7721 for After Final communications.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.

  
Armando Rodriguez  
Examiner  
Art Unit 2828

  
Paul Ip  
Supervisor  
Art Unit 2828

AR/PI  
June 2, 2003